

XXXVIII. SUPPLEMENTARY NEUROPTEROID
INSECTS FROM THE MALAY PENINSULA,
AND FROM MT. KINABALU, BORNEO.

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1939

(With twenty-three figures).

After the publication of papers on these insects the Selangor Museum sent me additional material. Much of this is the same as previously reported, some however are new records and a few are new species. These are here recorded. Attention should be called to the *Rhyacophila* from Mt. Kinabalu as further evidence of the relationship to the Asiatic mainland; no species of this mountain loving genus has previously been listed from these islands.

These species of Psocidæ are chiefly those widely distributed in the Malay region. The Myrmeleonid from Kinabalu is a very fine and handsome species.

Malay Peninsula.

PSOCIDÆ

Psocus taprobanes Hag.

Cameron Highlands, Tanah Rata, 24 May, 4,800 ft.

Psocus luteolus Bks.

N. Sembilan, Port Dickson, 23 Dec.

Amphipsocus pilosus Hag.

Kuala Lumpur, 3 April.

Taniostigma elongata Hag.

Larut Hills, 10 Febr., 3,700 to 4,000 ft.

Myopsocus undosus Hag.

Kuala Lumpur, 30 Oct., 11 May, and Langkawi Island, 14 April.

Calopsocus infelix Hag.

Larut Hills, 20 Febr., 4,500 ft., and Fraser's Hill, 19 June, 4,200 ft.

NEUROPTERA.

Berothella gen. nov.

Related to *Nosybus*, and of the same general appearance. The radius and subcosta are separate to tip, a cross-vein connecting them behind the stigma; three radial cross-veins. The other venation is different. The radial sector arises much nearer to the base of the wing, it has four branches; the median, cubital, and anal veins near the base are bent upward in a prominent curve, the median

not united to the radius; the gradates form a series of five before the middle, but several cross-veins before them, and three in a broken series beyond it, but scarcely beyond the middle of the wing (not as far out as in *Nosybus*). The hind wings are more like *Nosybus*; three radial cross-veins and three branches to the radial sector, five cross-veins before middle forming a gradate series, but more in the apical part of wing. Body, legs, and wings with the long hair very similar to *Nosybus*. Antennæ of male rather heavy, not hairy, more like *Berotha* than *Nosybus*, but the basal joint not elongate; abdomen without noticeable appendages.

***Berothella phantoma* sp. nov. (Fig. 8).**

Pale yellowish throughout; across the wing at main gradate series is a faint brownish band, and toward the tip of the wing a few other faint brown marks more or less in bands; the long hairs on the wings and the fringes are yellowish, the costal fringe is more or less interrupted with pale brown, especially toward the base of wing. The venation is pale yellow, but two or three of the upper gradates are brownish. The long hairs on the legs are white; the abdomen is yellowish brown, with short, brighter yellowish hair. In forewings there is a black dot in the discal cell as shown in the figure. The antennæ are without noticeable hair, and but little on the head; there are some long pale hairs on the pronotum and rest of the thorax above; the pleura are bare.

Expanse 14 mm.

Bukit Kutu, 3,500 ft., Selangor, 18 March (Pendlebury).

***Ankylopteryx polygramma* Gerst.**

Kuala Lumpur, 28 April, at light.

***Sisyra indica* Needham.**

Langkawi Island, West Coast, 25 April.

***Notiobiella tumida* Navas.**

Langkawi Island, West Coast, 29 April. It was described as a new genus, *Vaja*, from Java. I have shown that these forms with the elongate pronotum are the true *Notiobiella*, while the Indian species, *inquus* Hagen belongs to *Annandalia*.

***Eumantispa hamiltonella* Westw.**

Bukit Kutu, 12 March, 3,500 ft., described from East India.

TRICHOPTERA.

***Anisocentropus salsus* Betten.**

One from Bukit Kutu, 14 March, 3,500 ft.; described from Upper Assam.

Oecetinella lias Hag.

Kuala Lumpur, 30 March; a rubbed specimen, apparently of this Ceylonese species.

Polyplectropus javanicus Ulmer.

Bukit Kutu, Selangor, 9 March, 3,500 ft.; and Kedah Peak, 15 March, 3,000 to 3,500 ft. Known from Java and Sumatra.

Hydropsyche flavata sp. nov. (Figs. 13, 15, 19).

Pale yellowish throughout, the antennæ distinctly banded with brown, brighter yellowish on the vertex and dorsum of thorax, fore wings with similar, but short, bright yellowish hair, fringes pale, that near base of hind wings very long and yellowish, spurs yellowish. In fore wings the discal cell is fully three times as long as broad, fork 1 with a pedicel longer than width of discal cell, fork 2 back on discal cell for over width of cell, median cell nearly twice as long as discal, at its basal fourth with a cross vein to the cubitus, fork 3 with pedicel as long as that of fork 1, fork 4 back on median cell more than width of cell, base of fork 5 opposite to base of fork 4, the anals unite for some distance before the margin, about the width of a cell.

Expanse 16 mm.

Kuala Lumpur, 21 April, 2 April, 15 June.

The union of the anals before margin is unusual in this genus, but otherwise it is a normal *Hydropsyche*.

Pseudoneureclipsis ramosa Ulmer.

Larut Hills, 16 Febr., 3,700 ft.; and Fraser's Hill, Pahang, 27 June, 4,200 ft.; described from Java.

Nyctiophylax abrupta Bks.

Kuala Lumpur, 9 Febr.; and Malaya, Negri Sembilan, Port Dickson, 19 Nov.; described from India.

Glossosoma malayanum sp. nov. (Figs. 3-6).

Head brown, white hair in front and above base of antennæ, warts with gray hair; thorax brown, with a median gray stripe; abdomen brown above, pale below; legs yellowish, with long, brown spurs; antennæ pale on basal third and here annulate with brown, the annuli becoming broader and over apical half wholly brown; fore wings brown, with fine yellow and longer black hair, three white spots, one on cross-vein back of discal cell, one on connection of median and cubitus, and one up from end of anal; fringe nearly black; hind wings gray, darker along costal area, fringe gray. In the male there is a very large swollen area at base of fore wing, larger and

more circular than usual, the basal three-fourths of it yellow, with yellow hair; male genitalia as figured, the ventral spoon-shaped process very broad. Venation similar to that of other species; in fore wing the discal cell is very broad, above not quite connected to the radius; in hind wing the discal cell is plainly smaller than in fore wing, and proportionally more elongate.

Expanse 13 mm.

Fraser's Hill, Pahang, 4,000 to 4,200 ft., 31 May, and 6 July.

A female (15 mm. expanse), from Larut Hills, Perak, 3,700 ft., 12 Febr., is quite probably the same species; the wings are darker, but the venation the same, except that the discal cell of the fore-wing is hardly as broad, the mid tibiæ and basitarsi are dilated, fork 2 of hind wing reaches discal cell as in male; maxillary palpi (as in male) last joint slender, cylindric, scarcely as long as the third.

BORNEO.

PSOCIDÆ.

Psocus taprobanes Hag.

Kiau, Kinabalu, 21 May, 3,000 ft.

Psocus lemniscatus Enderl.

Marei Parei, Kinabalu, 30 April, 5,000 ft.

PERLIDÆ.

Neoperla (*Tetropina*) *fulgescens* Klap.

One from Kenokok, 24 April, 3,300 ft. Described from Mt. Kinabalu.

Neoperla (*Tetropina*) *larvata* Klap.

Two from Kabayau, 600 ft., 6 May. Described from Mt. Kinabalu.

Neoperla variegata Klap. (Fig. 7).

Two from Kenokok, 28 April, 3,200 ft. Readily known by the dark median line on pale pronotum. The male has a slender unforked process from dorsal segment.

Neoperla fuscigera Klap.

Several from Kenokok River, 24 April, 3,300 ft., and Tenompok Pass, 18 April, 4,200 ft. Described from Mt. Kinabalu; *N. naviculata* Klap. is probably the same as *N. borneensis* Enderlein, which we have already recorded from the mountain.

Neoperla sp.

One from Lumu Lumu, 16 April, 5,500 ft. It belongs to the section in which the cubital fork starts beyond

the first cubito-median cross-vein, as does the Bornean *N. hageni* and several Philippine species. It is larger than *N. hageni*, and the venation darker; but it is much smaller than the other species recorded above, with an expanse of about 12 mm.

NEUROPTERA.

Acratoleon dispar sp. nov. (Figs. 1, 2).

Face and palpi yellowish, vertex dark brown, a gray transverse band above antennæ, latter brown, darker at tips; pronotum yellowish, with a dark stripe each side, and some dark lines near middle, rest of notum mostly black, with some yellowish around mesoscutellum, and on basal part of metanotum, pleura pale, with two dark stripes near together, the upper one wider; legs largely yellowish, broadly dark on tips of femora, and on bases and tips of the tibiæ, tarsal joints dark at tips; abdomen brown, an elongate pale spot above near middle of each segment, except the last. Wings hyaline, veins pale, the longitudinal ones often marked with dark, some cross veins also dark; in fore wing between the subcosta and radius are about seven or eight brown spots; stigma whitish, small; behind most of these brown spots there is brown on the cross vein from radius to radial sector, in the radial field there is also six or more small brown clouds; a distinct brown cloud a little before the tip; medio-cubital cross veins narrowly margined with brown, a rather large oblique mark just beyond cubital fork, and several veins beyond this with a few dark spots, and a curved mark at rhagma; hind wings show an upcurved mark at end of the radius before the tip of wing, and a small dark cloud near rhagma, and another near end of first branch of radial sector.

Fore wings rather broad, hind wings very narrow toward base, both almost acute at tips, hind wings plainly longer than the fore wings. Fore wings with radial sector much before cubital fork, about five cross veins before origin of radial sector, two of them crossed, five branches to radial sector, cubital area wide, with four or five cells across, costals mostly simple, but some forked, especially toward stigma, no gradates in apical field, usually four cross veins between cubital fork and anal vein; second anal runs out in an even curve, but bends down and plainly unites with the third anal for a short distance; basal cubital fork distinct, and with two cross veins to cubitus and two to anal vein. Hind wings with a few costals near stigma forked, before radial sector two cross veins in one wing, three in other wing, about eight branches to radial sector, a few gradates in apical field, about twelve anal cross veins, the anal margin very plainly concave,

Abdomen is very much shorter than the wings. Legs very long and slender; basal tarsal joint about as long as the apical joint; spurs very slender, little curved, reaching a little beyond the second tarsal joint; claws moderately short and stout.

Fore wings long 34 mm. wide 12.5 mm.

Hind wings long 37 mm. wide 8.5 mm.

Abdomen long 22 mm.

One from Lumu Lumu, Kinabalu, Borneo, 5,500 ft., 16 April.

This differs a little in tarsal structure from the type of the genus, but it is closely allied to it by various characters, particularly by the second anal vein united to the third anal for a short distance.

Coniopteryx remota sp. nov. (Fig. 23).

Head and thorax above nearly black, pleura brown, abdomen yellowish, legs brownish, antennæ brown. Wings nearly evenly fumose, sometimes very dark, venation yellowish brown. Fore wing with venation as figured; the cross-vein from radius to the radial sector ends before the forking of the radial sector, the fork of the radial sector at base is broadly rounded; the cross-vein from medius to cubitus is out a short distance on the lower fork of the medius.

In hind wings the cross vein from radius to radial sector ends at base of the fork of radial sector, and the third anal is so short and near margin as to be scarcely visible.

Expanse 8.5 to 9 mm.

From Pakka, Kinabalu, Borneo, 10,000 ft. and Kamborangah, 7,000 ft. from 20 to 27 of March.

TRICHOPTERA.

Limnocentropus grandis sp. nov. (Figs. 12, 21).

Body dark brown; head and thorax with black and yellow hair, legs with much brown hair and short black spines; antennæ brown on basal and snow-white on the apical part of each segment beyond the second; wings a uniform dull brown, with much fine pale hair on the membrane and long black hairs on the veins; the subcosta and radius narrowly bordered with dark; fringes dark brown on the forewing, paler on the hindwing. Male genitalia with two long shining reddish brown median pieces above, below on each side a long curved hook, the superior pieces much more slender than in *L. borneoimus*. Venation very similar to that of *L. insolitus*, fork 2 does not go back so far on the discal cell, and fork 3 has a rather shorter pedicel; in the hindwings the discal cell is much shorter than in *L. insolitus*, much shorter than its pedicel, only about

one-half as long. The maxillary palpi are shorter than in *L. insolitus*, but the proportions are about the same, the last joint scarcely longer than the third.

Expanse 37 to 44 mm.

Marei Parei 30 April, 5,000 ft., and Kamborangah, 24 April, 7,000 ft., both on Mt. Kinabalu.

***Rhyacophila isolata* sp. nov.**

♀. Body reddish brown, head and thorax with dark brown to black bristles, and a few yellowish ones; antennæ dark, annulate with pale; legs brown, but hind legs mostly pale. Fore wing with erect bristles on basal part of anal veins, mostly black, but some yellowish, rather large golden spots in anal area and some in basal part, beyond middle with a great number of small golden spots, which, toward tip tend to form rows. Along the outer margin are areas wholly black at ends of the veins, a large dark spot above end of fork 1; above upper outer corner of discal cell there a dark spot reaching up to margin, and less distinctly, but rather broadly, obliquely behind; another dark spot just beyond base of fork 3 and reaching up to next vein; at the forking of median vein there is a prominent hyaline white spot; the outer fringe is alternately yellowish and black. Hind wings gray dark on upper tip, with a black fringe on the hind margin, but the outer margin with a yellowish fringe except at ends of the veins.

In fore wings the pedicel of discal cell is about as long as fork 2; fork 2 reaching back plainly further than fork 1, fork 3 with a pedicel as long as itself, fork 4 about as far back as base of fork 2, toward tip this fork is much wider than the others, fork 5 runs back plainly before base of discal cell. In hind wings fork 3 is longer than its pedicel, and fork 5 is back as far as base of the base of discal cell.

Hind tibiæ with the usual spines very numerous and distinct; tip of abdomen of female very much tapering.

Expanse 30 mm.

Pakka, Kinabalu, Borneo, 10,000 ft., 24 March.

The presence of a large species of *Rhyacophila* high up on Kinabalu again shows the affinity of this area with the highlands of the Asiatic continent.

***Ganonema pallicorne* McLachl.**

One from Mt. Kinabalu 3-4,000 ft., 3 May; described from Borneo.

***Asotocerus umbrosus* Bks.**

One from Kabayau, 6 May, 600 ft.; described from Puerto Princesa, Palawan Island.

Gæra octospina Bks.

One from Kabayau, 12 May, 600 ft.; described from the Philippines.

Gæra tagalica Bks.

Lumu Lumu, Kinabalu, 6 April, 5,500 ft.; described from Luzon.

GÆRINELLA.

The three known species from Kinabalu are separable as follows:—

Females

- 1—Fork 5 goes back to the cross-vein.....2
 Fork 5 stops much before cross-vein.....*conjuncta*
- 2—Expanse about 25 mm.; basal antennal joint
 much longer than head width.....*grandis*
- Expanse about 15 mm.; basal antennal joint
 but little if any longer than head-width.....*media*

Males

- 1—Fork 3 is a closed cell, that is the branches
 unite before margin.....*conjuncta*
 Fork 3 not forming a cell.....2
- 2—Expanse about 15 mm.; fork 3 nearly truncate
 at base, the lower branch of cubitus here
 bends down toward the anal and almost
 unites with the anal.....*media*
- Expanse about 25 mm.; fork 3 acute at base,
 lower branch of cubitus running out free
 from the anal.....*grandis*

Gærinella conjuncta sp. nov. (Figs. 10, 20).

♂. Brown, wings a uniform brown, black dot in base of fork 2, legs paler brown, basal joint of antennæ dark brown, beyond pale. Head and thorax with dark brown hair; basal antennal joint about as long as head width, somewhat curved, the inner edge near middle protuberant, clothed with much very long brown hair, and tufts of dense shorter black hair, especially on inner sides; palpi pale, slender, with tufts of dense brown hair at tip.

In fore wings the discal cell not near as long as pedicel, fork 1 reaching back on discal cell the full width of cell, fork 2 not reaching so far back as fork 1, fork 3 not as far back as base of discal cell, the two branches uniting quite a distance before the margin and forming a closed cell, lower branch of cubitus near the cross vein does not bend toward anal but runs out well free from anal. Male appendages as figured, the lateral process with slender

spine at tip, and on inner side with a forked process; each part slender and swollen near tip; median plate with four prongs at tip.

♀. Very similar to male; a pale spot at base of fork 2 and one on cubitus before it forks; basal joint of antennæ straight, but nearly as long as in the male; forks 1 and 2 as in the male; branches of fork 3 do not unite, but run out normal to margin; fork 5 does not extend back to cross vein between branches of cubitus; the second anal is forked twice toward base.

Expanse 17 mm.

Lumu Lumu, Kinabalu, Borneo, 5,500 ft., 16 April.

***Gœrinella media* sp. nov.** (Figs. 11, 17, 18, 22).

♂. Pale brown, antennæ beyond basal joint yellowish; wings pale brown, with the usual two hyaline spots in front pair. Basal joint of antennæ not as long as head width, slender and probably hairy (rubbed in type). Wings with the usual hairs and scales; in fore wing the discal cell is as long as its pedicel, and not as slender as in some species; fork 1 does not reach back on discal cell, and is rather broad at base, fork 2 reaches back a short distance on discal cell, fork 3 runs out normal; the lower branch of the cubitus near the cross-vein bends down toward anal and almost or quite unites with it, but near tip bends out to form the usual cell; all of the apical cells are rather broad.

The lateral male appendages are cleft at tip, the superior plate slender, and beneath it a long slender curved process each side.

The female is similar to the male, the basal joint of antennæ about as long, slightly hairy; the fore wing has the discal cell as long as its pedicel, fork 1 back on discal cell a very short distance, its base rather broad; fork 2 as in male, fork 3 reaches back as far as fork 2, and fork 5 reaches back to the cross-vein.

Expanse 16 mm.

Lumu Lumu, Kinabalu, Borneo, 5,500 ft., 3 to 17 April.

***Polymorphanisus nigricornis* Walk.**

One from Kabayau, 14 March, 600 ft.

***Macronema trifasciatum* sp. nov.**

Pale yellowish; legs unmarked, except that the tips of the tarsal joints are often a little darker; antennæ pale; fore-wings yellowish with three dark bands, one near base, not reaching the costa; one at middle formed of four connected spots, and leaving a pale central area; the third band is broad and covers the apex, the inner margin darkest and irregular. Venation similar to that of the *fastosum* section of the genus.

Expanse 24 mm.

Several from Kabayau, Kinabalu, 12 May, 600 ft. This is probably the form "f" which Ulmer lists as a form of *M. fastosum*, a species typically confined to the mainland and with mostly black antennæ and very different wing markings.

Dipseudopsis infuscata McLachl.

Marei Parei, Kinabalu, 2 May, 5,000 ft.; widely distributed in the Malay region.

Hydromanicus hermosus sp. nov. (Figs. 9, 14, 16).

Head yellow, with yellow hair, a large transverse black spot over the front part of the vertex; thorax mostly yellow, also with yellow hair; abdomen brown above, yellowish beneath; forewing deep brown, each with about thirteen mostly large, yellowish spots, as in the figure; two at or near middle and nearly or quite connected to form a band, four near the base, and three near tip; where these spots touch the margin the fringe is yellowish, elsewhere brown. Hindwings a nearly uniform brown, about as dark as the fore pair, fringe brown. Antennæ yellowish brown, the basal joints paler; palpi more yellowish; legs yellowish, the hind tibiæ darker and with much brown hair. Forewings not as elongate as in *H. flavoguttatus* or *H. jacobsoni*, the venation similar, but the discal and median cells shorter, the crossvein back from the median cell is hardly oblique, and that to the cubitus is very faint and where visible is straight across, not oblique, and more basally placed than in *H. flavoguttatus*. Hindwings very similar to *H. flavoguttatus* but the discal cell is here also a little shorter, and the first fork hardly one-half way back on the discal cell.

Expanse 22 mm.

From Kiau, 12 April, 3,000 ft., Mt. Kinabalu.

Explanation of Figures.

- Fig. 1—*Acratoleon dispar*, tarsus.
2—*Acratoleon dispar*, base of forewing.
3—*Glossosoma malayanum*, genitalia.
4— " " forewing.
5— " " hindwing.
6— " " base of forewing.
7—*Neoperla variegata*, genitalia above.
8—*Berothella phantoma*, forewing.
9—*Hydromanicus hermosus*, genitalia, side.
10—*Gœrinella conjuncta*, genitalia, top.

- 11—*Göerinema media*, genitalia, top.
- 12—*Limnocentropus grandis*, genitalia, top.
- 13—*Hydropsyche flavata*, hindwing.
- 14—*Hydromanicus hermosus*, forewing.
- 15—*Hydropsyche flavata*, genitalia, side.
- 16—*Hydromanicus hermosus*, genitalia, above.
- 17—*Göerinema media*, forewing.
- 18—*Göerinema media*, hindwing.
- 19—*Hydropsyche flavata*, midtarsus.
- 20—*Göerinema conjuncta*, fore and hindwing.
- 21—*Limnocentropus grandis*, genitalia, side.
- 22—*Göerinema media*, genitalia, side.
- 23—*Coniopteryx remota*, venation.



